THE ZOOLOGIST.

THIRD SERIES.

Vol. XVII.] FEBRUARY, 1893. [No. 194.

OCCURRENCE OF SOWERBY'S WHALE (*MESOPLODON BIDENS*) ON THE NORFOLK COAST.

By Thomas Southwell, F.Z.S.

On the 19th December, 1892, I received a telegram stating that a strange fish was ashore at Overstrand, near Cromer, and subsequently that it was some species of whale; on the 20th, in company with Mr. S. F. Harmer, of the Museum of Zoology and Anatomy, Cambridge, who happened to be staying in this neighbourhood, I went to Overstrand, where we found an adult female of the above rare species.

Its history, we learned, was as follows:—At about 8 a.m. on Sunday, the 18th December, one of the Overstrand fishermen saw from the cliff an object lying in shallow water near the beach, which he at first took to be a log of wood, but soon perceived to be a large "fish." After obtaining assistance, he fastened a noose over its tail and secured it by an anchor, till it was placed on a trolley and drawn up the gangway to a shed on the cliff where we saw it. The animal was alive when first observed, but died before it was taken from the water. As placed, it was unfortunately in such a position as to render photographing difficult, and our attempts proved unsatisfactory. I believe no photograph was taken after it had been removed from the shed. Before our arrival it had been eviscerated, and a very advanced fœtus was taken from it. We made a very careful examination of the exterior, and hope to publish a full description both of the old female and of the young one in due course.

In the meantime I may say that the female was of an uniform glossy black colour, with the exception of the anterior edges of the flukes of the tail, and the jaws, which were grey of various shades—in places almost white, and the body was spotted and blotched with white or pale grey in a very curious manner. The fishermen told us that, when quite fresh out of the water, there was a bluish shade pervading the whole. The young animal was black above and reddish on the sides and lower parts, probably owing to the effusion of blood into the skin, which would doubtless otherwise have been white. The total length of the old female, measured in a straight line to the centre of the tail, was 16 ft. 2 in., and that of the young one 5 ft. 2 in.; across the flukes of the tail the adult measured 3 ft. 8 in.

The present is the nineteenth known example of this remarkable animal, all of which have been met with in the North Atlantic during the present century; but, with the exception of one taken in 1889 at Atlantic City, which came into the possession of the United States National Museum at Washington, and of which no account has, I believe, at present been published, in no other instance has an example in perfect condition come under the notice of a cetologist. Individuals or their remains have been found in Scotland and Ireland, but the only previous English example was met with at the mouth of the Humber in September, 1885 (Ann. & Mag. N. H. 1886, p. 53).

ANIMAL LIFE IN EAST GREENLAND.

By Colonel H. W. Feilden, C.M.Z.S.

It is extremely interesting to note how, year by year, our knowledge of the distribution of animal life around the great ice-clad island-continent of Greenland is developing. In 'The Zoologist' for 1890 (p. 178), I drew attention to the finding of Musk-oxen in considerable numbers on Clavering Island in 74° 20′ N., by Captain Knüdsen, of the Norwegian sealer 'Heckla.' In the 'Geographical Journal' for January, 1893, Lieutenant Ryder, of the Danish Navy, gives an interesting summary of his East Greenland Expedition, 1891–92, and at page 45 he records, "Animal life is rich, especially in Jameson's Land, where Reindeer are seen in wonderful numbers. They also are numerous on the coasts of the interior fjords. Musk-oxen were seen around Hurry Inlet, and traces of Foxes, Hares, Bears, Ermines, and Lemmings were observed in Jameson's Land. The richness of vegetation (150 flowering plants were gathered in Scoresby Sound), and the size attained by it, especially around the western basin, is most astonishing, especially in comparison with what it is on the western coast, or a little further north where the snowfall is smaller."

The southern range of the Musk-ox is now satisfactorily established as far south on the east coast of Greenland as midway between the parallels of seventy and seventy-one; it will in all probability be found in the future to extend along the coast line of Egede Land to the sixty-fifth parallel of latitude. Thus we find that the habitat of the Musk-ox is brought comparatively close to Europe, and I see no insuperable difficulty in the way of procuring living specimens of these most interesting animals. As far back as the year 1879, I pointed out, in 'The Zoologist' (p. 17), what a valuable accession to our fauna the Musk-ox would prove, if it could be introduced successfully into Great Britain. I see no reason why it should not thrive on the mountains of the Highlands of Scotland.

In the winter season the Musk-ox is covered with a long-stapled fine wool in addition to its coat of hair. This wool is of a light yellow colour, and as fine as silk. Sir John Richardson states that stockings made from this wool were more beautiful than silk ones. Young Musk-oxen are very easily reared and tamed, and there could not be any great difficulty in catching either old or young in Jameson's Land. The risks incident to their transport from East Greenland to Europe are small, and the subject is well worth the consideration of the Council of our Zoological Society.

To my mind the most interesting feature in connection with the terrestrial mammalian life of the great island-continent, extending from 60° to 83° 24′ N., a distance of fifteen hundred miles, rests in the fact that throughout the entire stretch of its coast line, so far as it has been explored, except where glaciers or the ice-cap meet the sea, the fringe of non-glaciated shore, extending for thousands of miles, supports terrestrial mammalian life and phanerogamic vegetation. In favoured localities, even a remarkable number of large mammals find the means of existence.

Therefore in the northern hemisphere we see an island-continent, with its southern extremity in the same parallel as the Shetlands, Bergen, Christiania, and St. Petersburg, remaining under the most stupendous process of glaciation, extending fifteen hundred miles further towards the Pole, and yet the glaciation of Cape Farewell, its southern extremity, is as complete as at its northern apex, between the eighty-third and eighty-fourth parallels of latitude.

This astonishing development of glaciation we know to be due to the encircling of Greenland by cold arctic currents, and not to its geographical position alone. Are the advocates of glacial epochs prepared to prove that the glaciation of Scotland, England, Iceland, the Faroes, and Norway was ever more complete or excessive than that now existing in Greenland?

Until this is proved, I think we as zoologists should, with the knowledge we possess of terrestrial animal life in Greenland, be extremely cautious in supposing that even during the period of greatest ascendancy of the glacial epoch in the northern hemisphere, the terrestrial fauna and flora, of those regions possessed of a sea coast, were entirely removed by glaciation of the land surfaces, for in glaciated Greenland we find a considerable terrestrial mammalian fauna inhabiting its entire extent of shore.

NOTES ON THE BIRDS OF NORTH-WESTERN CANADA.

By D. L. Thorpe.

Communicated by the Rev. H. A. Macpherson.

[This paper, draughted from the notes and letters of Mr. Thorpe, supplies the gist of his observations on a visit to the North-West in 1891. Mr. Thorpe left England on the 8th May, and reached his headquarters at Dalesbro' about the end of the month. Dalesbro' is situated some 400 miles south-west of the city of Winnipeg. Thanks to the kindness of my friend Mr. Miller Christy, in furnishing an introduction to Mr. Ernest Thompson, of Toronto, Mr. Thorpe found full instructions for his work awaiting him at Dalesbro'. Unfortunately, Mr. Thorpe sacrificed much valuable time in assisting his hosts in their farming operations, his good nature succumbing to their pressing importunity and determination to make the most of a handy guest; so that he was induced to linger through June and July at Dalesbro', devoting only a portion of his time to scientific work. Dalesbro' is surrounded by an endless succession of rolling prairies, redeemed from utter sterility by a plentiful growth of coarse grasses, which attain their greatest profusion on the banks of the sloughs. These sloughs or ponds are generally fringed with a small species of poplar, which would doubtless assume more pretentious dimensions were it not for the frequent recurrence of prairie fires. On the 17th day of August, 1891, Mr. Thorpe left Dalesbro' for the Souris River, accompanied by a "hired man," a young Englishman named Holmes, who proved to be an excellent fellow, and made himself extremely useful.

When the Souris coal-fields were reached, the landscape became picturesque and varied; coal fires—and subsidences due to such fires—having here transformed the crust of the prairie into a region of large ravines and intervening table-lands. After leaving the Souris coal-fields, the party followed the trail to a police settlement called Wood End, where alkaline sloughs and creeks became numerous, while extensive morasses surrounded lakes of considerable size. Many of Mr. Thorpe's most interesting notes were made here, on the shores of a lake which is represented on our chart, but without a name being assigned: for purposes of convenience, I have entitled it the "Nameless Lake" in this paper.

Mr. Thorpe returned to Dalesbro' on Sept. 27th, and remained there until the beginning of December. He proposes to return to the North-West for collecting purposes early in the spring of 1893. Cordial thanks for assistance rendered are due to Mr. Ernest E. Thompson, whose 'Birds of Manitoba' has proved of great assistance, and the arrangement and nomenclature of his book are chiefly adopted in this paper.—H. A. MACPHERSON.]

AMERICAN EARED GREBE, *Colymbus nigricollis californicus.*—This species was numerous in autumn on the Nameless Lake, and both young and mature specimens were shot. The gizzard of one of these contained two small fishes entire.

PIED-BILLED GREBE, *Podilymbus podiceps.*—The only example met with was killed with a rifle on Long Creek. Though shot through the head, it was quite lively an hour after receiving the injury.

Loon, *Urinator imber.* — A solitary Great Northern Diver appeared one evening early in September on the Nameless Lake, and there remained, swimming cautiously in the centre of the water.

Black Tern, *Hydrochelidon nigra surinamensis.*—Many pairs of Black Terns breed at Moose Creek, where dragon-flies form a large portion of their dietary; but the birds were often to be seen diving into the water in pursuit of fish or of aquatic larvæ. Their cry is a short scream, repeated again and again if the birds are alarmed by an intruder. About the beginning of August these Terns began to skim around the prairie sloughs. The last that I saw of them was on the 29th of August, the majority having commenced migration prior to that date.

Double-crested Cormorant, *Phalacrocorax dilophus.*—The only Cormorant that I fell in with was shot on a creek eighty miles west of the Souris coal-fields. I saw it alight on a distant pool made by a beaver's dam, and, after two unsuccessful shots, bagged the bird as it emerged after a long dive.

American White Pelican, *Pelecanus erythrorhynchos.*—Great numbers of Pelicans frequented the Nameless Lake; others were met with on the Souris River and on Moose Creek. There were many young ones in the flocks which we came across. This species has a slow graceful flight. On some evenings the whole army of Pelicans, assembled on the above-mentioned lake, would take flight, and circle leisurely round and round until the soaring birds appeared no larger than small gulls. They never journeyed any distance for their evening flight, but were content to gyrate slowly, gradually ascending or descending without any apparent effort.

Hooded Merganser, *Lophodytes cucullatus.* — Chiefly met with on Moose Creek, where it appeared to be breeding in considerable numbers. I saw three or four broods of young Hooded Mergansers in company with the old females, nine or ten young ones in a brood. This species appears to linger in N.W. Canada long after the majority of wild ducks have departed; I shot an old drake on Moose Creek as late as December 1st.

Mallard, *Anas boscas.*—Common on the Souris River, but comparatively scarce on Moose Creek; the numbers of breeding birds being largely augmented in the fall by arrivals from more northern regions. This species was last seen on October 21st. Even in the remote region investigated, the Mallards were far warier and more difficult to approach than any other species of wildfowl.

Dusky Duck, *Anas obscura.* — A specimen (male) shot on Long Creek, near the Canadian boundary, extends the western limit of this species more than a hundred miles, and disposes of Hunter's statement that "Manitoba is their most western limit." It was, however, the only one met with, or, at all events, secured; the species is rare in this region.

Gadwall, *Anas strepera.*—Numerous as a breeding species on Moose Creek, and young birds were obtained in several stages of development. In September it became common on Long Creek and the Souris River.

American Widgeon, *Mareca americana.*—Only met with in the neighbourhood of Long Creek, where it was plentiful in September.

Green-winged Teal, *Querquedula carolinensis.* — Abundant on Long Creek and on the alkaline sloughs in September, but we did not find it nesting.

Blue-winged Teal, *Querquedula discors.*—One of the commonest ducks on Moose Creek, and many young ones were shot for the "pot." Plentiful throughout the region. The nests which I found were uniformly situated on the banks of a creek, sheltered from observation by a dense growth of tall grasses. The sex of the young in first dress is easily distinguished by a reference to the greater coverts.

Shoveler, *Spatula clypeata.* — The most abundant duck on Moose Creek, where many pairs breed; plentiful likewise on all adjacent waters. I caught several ducklings of tender age, and found that ten was the usual complement of a brood. The old birds were feeding on aquatic plants.

Pintail, *Dafila acuta.*—The only Pintails which we found breeding were two pairs of birds, which nested on Moose Creek. I secured two of the ducklings and one of the old birds; the latter proved to have been feeding on the seeds of some species of rush.

Pochard, *Aythya americana.*—An adult drake, shot out of a family party at Long Creek, on the 10th September, was the only example that I secured. We did not meet with the species on any other occasion.

CANVAS-BACK POCHARD, *Aythya vallisneria.*—The only specimen we saw was an adult female, which I shot on Long Creek on the 26th of August. I tried to make it take wing, but it preferred to escape by flapping along the top of the water, its large feet being very conspicuous.

LESSER SCAUP DUCK, *Aythya affinis.*—A common breeding bird at Moose Creek, at Long Creek, and on the Souris River. A nest which I photographed *in situ*, with the eleven eggs which it contained, occupied a slight hollow in the centre of a strip of tall grass; it was lined with feathers and dry bents. The nests which we found were uniformly placed at a very short distance from the water side.

BUFFLE-HEAD, *Charitonetta albeola.*—In September a good many Buffle-heads were met with on Long Creek; chiefly adult males, which consorted largely with *Erismatura rubida.* They especially favoured that portion of the creek which was nearest to its exit from the lake, and, from the agility with which they dived, were difficult to shoot.

RUDDY DUCK, *Erismatura rubida.*—We often enjoyed the quaint attitudes indulged in by this species, which we found commonly represented on Long Creek in September. Its favourite method of resting on the water is to carry its tail cocked up, almost at right angles to the body. We did not shoot any old birds, but obtained specimens of the young in the little-known flapper stage, half down, half feathers.

SNOW-GOOSE, *Chen hyperborea.*—The "white wavy" is well known to the settlers of this district as a bird of double passage, but it does not appear to visit this region in autumn in numbers comparable to those of the spring migration. It was on the 5th of October that I fell in with a gaggle of four Snow-Geese. They were extremely wary, and the fine old gander which I secured cost me a stalk of about four miles. Snow-Geese, when viewed swimming in fresh water, appear to be uniformly white; but if the birds rise, their black primaries at once come into prominence.

CANADA GOOSE, *Branta canadensis.*—A very abundant bird in this region, especially in September. The extreme youthfulness of several of those that I shot satisfied me that they must have been bred in the localities where they were obtained.

AMERICAN BITTERN, *Botaurus lentiginosus.*—This bird proved to be common along the Souris, and in the adjoining swamps, but I never heard the bird "pumping." The only note which I heard uttered was the croak which it always emitted when flushed. It offers very poor sport, its slow flight and soft feathers rendering it an easy bird to secure. Its dietary is very varied; a bird, whose toilette I unfortunately interrupted, had swallowed twenty small fish, one large black beetle, several grasshoppers, a mouse, and a shellfish about the size of a mussel. When shot it was in a very wet condition; in fact, it was hardly able to fly, and appeared to be dusting itself with powder. I have, personally, no doubt that this species—and such others as possess powder-tracts—employ the powder to dust over and dry their plumage after partial immersion.

GREAT BLUE HERON, *Ardea herodias.*—We met with a few Great Blue Herons on Long Creek.

BLACK-CROWNED NIGHT-HERON, *Nycticorax nycticorax nævius.*—A single adult, which I shot on Long Creek, was the only one met with.

WHOOPING CRANE, *Grus americana.*—A number of Whooping Cranes made their appearance upon the stubble on the 7th of October. These appeared to be uniformly adults; but I saw a young one fishing on the banks of the creek in company with two old birds, and stalked them unsuccessfully.

SANDHILL-CRANE, *Grus mexicana.*—These birds were numerous on the stubble-fields at Dalesbro' early in September, and their loud trumpeting could be heard at a great distance. They were excessively wary; I crawled many miles over the prairie in pursuit of them without getting a shot, but eventually shot one from my bedroom window with my rifle.

KING RAIL, *Rallus elegans.*—I wounded a bird of this species (which is rare in the region) upon an alkaline lake 75 miles west of the Souris coal-fields, but not having a retriever, I eventually lost the specimen.

SORA RAIL, *Porzana carolina.*—We saw a few Common Rails on the swamps near the Nameless Lake.

AMERICAN COOT, *Fulica americana.* — This bird proved to be very common in the Souris district.

RED-NECKED PHALAROPE, *Phalaropus lobatus.*—This species was very abundant on the Nameless Lake in September, but the young considerably outnumbered the adults. They seemed to spend most of their time in floating gracefully on the water, always congregating in flocks composed exclusively of their own species.

Wilson's Phalarope, *Phalaropus tricolor.* — We did not find the nest of this bird, but as I shot two young ones as early as July 21st, it is probable that they breed somewhere near. The birds in question, like one shot in September, contained the remains of numerous small beetles. They consorted freely with other species of waders.

American Avocet, *Recurvirostra americana.*—When shooting on an alkaline slough eighty miles west of the Souris coal-fields, on the 10th of September, we fell in with three of these graceful birds, wading in the shallows, daintily probing the mud with their recurved bills, so little apprehensive of danger that they allowed me to approach within thirty-five yards of them. These were the only examples noticed.

Wilson's Snipe, *Gallinago delicata.* — In September Snipe were plentiful on marshy land near the Nameless Lake, but we never met with them in "wisps." Those which I flushed invariably rose singly or in couples; their flight appeared to be less irregular than that of the European bird.

Long-billed Dowitcher, *Macrorhamphus scolopaceus.* — A few Red-breasted Snipe arrived on the sloughs near Dalesbro' on July 6th; they remained until the end of the month, and I shot several of them, all adult males.

Pectoral Sandpiper, *Tringa maculata.* — The only specimens met with were adult males, shot in July on a slough near Dalesbro'.

Least Sandpiper, *Tringa minutilla.* — Large numbers of American Little Stints frequented the shores of an alkaline lake in the Souris district in September. All those brought home are in first dress.

Marbled Godwit, *Limosa fedoa.*—This bird breeds sparingly near Dalesbro'; I found four highly incubated eggs *in nido* on the 28th June. Several large flocks of this Godwit made their appearance on the 29th of August. Their loud shrill whistle is audible at a great distance.

Greater Yellow-legs, *Totanus melanoleucus.*—Large numbers of the Greater Yellowshanks frequented the alkaline lakes in August and September, never alone, but always in flocks, usually accompanied by some of the allied species. When the large flocks of *Limicolæ* were disturbed and took wing, the loud clear whistle of this Sandpiper could always be distinguished from the mixed babel of the mingled host.

Yellow-legs, *Totanus flavipes.*—The first example of the Lesser Yellowshank that I came across was a solitary bird, which frequented a slough near Dalesbro' on the 9th July. On the 21st of the same month a flock of this species appeared on another slough. I shot two adult birds, both males. I never happened to fall in with the species again.

Solitary Sandpiper, *Totanus solitarius.*—As early as July 6th I shot an adult which had probably been breeding near Dalesbro'. No others were seen until August, when the species became abundant, but disappeared at the end of the month.

Willet, *Symphemia semipalmata.*—This wader breeds numerously near Moose Creek, laying three eggs in a slight hollow in the ground, screened by the long grass which clothes the banks of the creek. The old birds are extremely solicitous for the safety of their young, disturbing a whole neighbourhood with their piercing vociferations of "wil-ette, wilet, wilette." They used to follow me most persistently along the creeks, and spoilt many a coveted shot. Long before they can fly the nestlings accompany their parents to the sloughs, and the exact whereabouts of the birds in half-down may often be ascertained by noticing the watchfulness with which the adults drive away Swainson's Buzzards from the vicinity of their young charges.

Bartram's Sandpiper, *Bartramia longicauda.* — One of the most familiar of the summer birds of this region, locally known as the "Quail." Unlike the majority of species, Bartram's Sandpiper nests on the prairie, generally at some distance from water. Four eggs usually constitute a clutch. I photographed a nest *in situ.* On returning to the spot, I found the nest had been roofed in with stems of dry grass, these being interwoven with the blades of long grass growing around; a hole for entrance or exit had been left on one side. The present species has a curious habit of holding the wings in a vertical position for a few seconds after alighting on the ground, a trait which displays the barred lining of the wings to great advantage. The gizzards of the birds dissected usually contained small black beetles.

Spotted Sandpiper, *Actitis macularia.* — This picturesque little Sandpiper builds its slight nest on the banks of most of the creeks and rivers. The eggs vary in number from three to four. We never met with this Sandpiper on the sloughs or alkaline lakes; from which I infer that it prefers running water to stagnant pools.

Killdeer Plover, *Ægialitis vocifera.*—This charming Plover of the prairie proved to be nesting numerously in all the district. Many are the ruses employed to attract a stranger away from its young. Sometimes it lies on the ground with one wing extended and the tail expanded like a fan, as if endeavouring to draw attention to the bright feathers of the rump and tail-coverts. The pattern of the markings of the young in down correspond to the feathering of the adults.

Pinnated Grouse, *Tympanuchus americanus.* — This bird appears to be rare in the region. The only example that we came across was an old cock, which I shot near Moose Creek in July.

Prairie Chicken, *Pediocætes phasianellus campestris.*—The Common Sharp-tailed Grouse breeds generally in this region. Dr. Coues states that thirteen was the largest number of eggs which he found in a clutch; their number ranges from ten to fourteen, but I only found the latter number on two occasions. It has been stated that this bird does not feed on grain, but this is a mistake. Its chief food is the seed-vessel of a wild rose; but it resorts to the stubbles in autumn, and feeds on grain greedily. Some of those which I shot in the stubble contained nothing else but grain; others had a few small grasshoppers in their crops.

Passenger-Pigeon, *Ectopistes migratorius.*—A few Passenger-Pigeons were observed on the wooded banks of the Souris at Oxbow in June; presumably they breed there, but we did not find a nest.

Turkey-Buzzard, *Cathartes aura.*—The only Turkey-Buzzard that I met with in this district was shot on Sept. 13th, near the Souris River. It was feeding on the carcase of an antelope.

Swallow-tailed Kite, *Elanoides forficatus.*—My attention was drawn to a bird of this species by the hubbub created by a party of King-birds, which mobbed the rare stranger with the utmost temerity. The hawk struck one of the boldest of its persecutors, which fell to the ground near me with a fractured carpus. The stately Kite pursued its journey southward with equanimity, and soon left its persecutors far astern. I never met with the species afterwards.

AMERICAN MARSH-HARRIER, *Circus hudsonius.*—Abundant in the Souris district, but the blue dress of the adult male is relatively uncommon. This Harrier feeds principally on grasshoppers, but occasionally picks off a small bird, and is a source of some discomfort to the settlers, who begrudge the blackmail which it levies on their poultry-yards.

SHARP-SHINNED HAWK, *Accipiter velox.* — This game little hawk was fairly common near the Nameless Lake in September. Those which I dissected had been feeding on small birds.

RED-TAILED HAWK, *Buteo borealis.*—A few breed on Moose Creek, but we did not find this species on the Souris River. Those that I dissected had fed on grasshoppers, with the exception of one individual, which contained a Red-winged Starling.

SWAINSON'S HAWK, *Buteo swainsoni.* — One of the commonest birds of prey, especially near Moose Creek. I found half-a-dozen pairs of these birds nesting within an area of four miles. The anxiety evinced by the old buzzards, as they soared aloft, generally led me to their nests. Dr. Coues states that he generally found two eggs of this species in a clutch; never more, and sometimes only a single one. I never found less than two eggs or young in a nest, but several of our nests contained three young birds. A nest of this species, which I photographed on July 30th, was a fairly substantial structure of dead twigs, placed on the top of a prickly thorn, about twelve feet from the ground.

GOLDEN EAGLE, *Aquila chrysaëtos.* — The Golden Eagle is believed to be a comparatively rare bird in this region, at any rate, as a breeding species. On the 11th July I observed a fine Golden Eagle circling in the air at a great height above Moose Creek. Three days later its eyrie was discovered by a settler named Reed, situated on the bank of a small ravine. It contained three young birds of different sizes, but all feathered and equally intent on eating the gophers which the old birds had catered for them. On Reed's approach these eaglets fluttered out of the nest and sought to escape, defending themselves so pluckily that Reed killed them with stones. The smallest eaglet still retained much down. I may add that though the Golden Eagle was not observed in the Souris River, yet we found a nest on the bank of a ravine in that district, which we could not assign to any other species; it was a very cumbrous pile, composed of large sticks and the dry "ribs" of buffaloes.

PIGEON-HAWK, *Falco columbarius*.—A common species in the Souris district, preying on small birds.

AMERICAN SPARROWHAWK, *Falco sparverius*.—A few pairs bred in the vicinity of Moose Creek. The birds which I dissected had been feeding on grasshoppers.

AMERICAN LONG-EARED OWL, *Asio wilsonianus*.—Only met with on the Souris River, near Oxbow, Nov. 5th, when I saw half-a-dozen. The example which I shot to identify the species had been feeding on mice.

SHORT-EARED OWL, *Asio accipitrinus*.—This owl was common on the Souris River in September, and at Dalesbro' after the last days of October. I shot one on Nov. 8th, and saw several others, though the snow lay a foot deep on the prairie.

SNOWY OWL, *Nyctea nyctea*.—Although the Snowy Owl is believed to be exclusively a winter visitor to this region, instances of its lingering on its winter hunting-grounds far into spring are forthcoming. For example, a Snowy Owl, which I examined in the flesh, had been obtained alive by J. N. Davis as late as the 20th May. In the autumn the first Snowy Owls, three in number, made their appearance on Sept. 29th, and the species was fairly represented by the middle of October. An example which I met with on Nov. 17th, appeared to be perfectly white, but its great wariness defeated my attempts to stalk it, though I shot another individual of the same species on the following day.

BELTED KINGFISHER, *Ceryle alcyon*.—In the neighbourhood of Long Creek we often watched Belted Kingfishers waiting for their prey, perched on some bough overhanging the water.

FLICKER, *Colaptes auratus*.—When camping on the banks of the Souris River, we constantly saw Golden-winged Woodpeckers; indeed they often perched on our tent when we were miles away from trees. Those which I dissected had been feeding on ants.

WHIP-POOR-WILL, *Antrostomus vociferus*.—This species was numerous at Moose Mountain, where it bred.

NIGHT-HAWK, *Chordeiles virginianus sennetti*.—This species breeds numerously near Dalesbro'. During the day the birds are generally to be found squatting on ploughed land or upon a stone upon the prairie. During the first hours of the morning, however, I often observed them hawking near the ground in swallow-fashion, especially near the corral where the cattle were kept. Their so-called "booming" is made when they turn to ascend; the pressure of air on the primaries causes them to vibrate, thus producing the noise in question.

Chimney-Swift, *Chætura pelagica.*—The only example that I observed the whole summer came under our notice near the Little Pipestone, May 26th, 1891.

Ruby-throated Humming-bird, *Trochilus colubris.*—On the 20th August I watched a male bird darting about the bushes in a ravine at the Souris coal-mines. At the first glance I mistook it for a butterfly, but was soon undeceived. I had my gun with me, but had not the heart to shoot it.

Kingbird, *Tyrannus tyrannus.*—This vivacious species was almost ubiquitous, nesting all along Moose and Long Creeks, and darting at the head of any intruder. It was pretty to see the male bird perching on a bush and warbling a song to his sitting mate, rising into the air, hovering to pass dexterously on a passing insect, and returning fondly to its mate. All the nests possessed a certain protrusion of sticks on one side. The stomachs of all the birds examined contained the remains of insects.

Arkansas Tyrant-Flycatcher, *Tyrannus verticalis.*—This bird is not included in Mr. Thompson's 'Birds of Manitoba'; but he has kindly identified one of those which I shot on the banks of the Souris River, where it breeds in small numbers. It feeds chiefly on grasshoppers.

Prairie Shore-Lark, *Otocorys alpestris praticola.*—A common breeding bird, generally to be met with on the prairie along the trail of the settlers.

Canada Jay, *Perisoreus canadensis.*—The "Whisky Jack" of the settlers is frequently seen on the wooded banks of the Souris, and breeds there; I met with it also at Moose Mountain.

Northern Raven, *Corvus corax principalis.*—While travelling on the trail between Dalesbro' and Cannington early in July, I saw two Ravens sitting on a rail, and got within thirty yards of them. They were waiting to feed on the carcase of a dead cow on the prairie.

American Crow, *C. americanus.*—Generally observed near the prairie towns, where they feed directly after daylight.

Bobolink, *Dolichonyx oryzivorus.*—To be seen everywhere on the prairie, perching on the buffalo scrub, both in the rich nuptial dress of the male and in the more sober attire of the female. Coues does not mention that this bird feeds largely on insects. One of those that I dissected was crammed with red grasshoppers.

Cowbird, *Molothrus ater.*—An abundant species, partial to following the herds of cattle.

Yellow-headed Blackbird, *Xanthocephalus xanthocephalus.*—We found this species breeding on Moose Creek, and shot one out of a flock at Long Creek. It feeds on small grasshoppers.

Red-winged Blackbird, *Agelaius phœniceus.*—An abundant summer resident in the neighbourhood of willow-fringed creeks.

Western Meadow Lark, *Sturnella magna neglecta.*—This species nests plentifully on the open prairie. When flushed it soon alights, but only to *run* to a fresh place of concealment.

Brewer's Blackbird, *Scolecophagus cyanocephalus.*—Abundant in August on the banks of the Souris River, flying in family parties.

American Goldfinch, *Spinus tristis.*—A good many pairs nested at Moose Creek; and, though breeding, were generally to be seen flocking together. This fact is to be explained by the consideration that the garden of wild flowers, from which they gleaned their favourite seeds, was situated on the open prairie, nearly a mile from the bushes which held their nests.

Snow-Bunting, *Plectrophenax nivalis.*—Very common in the fall, feeding on the grass-stems which peered above the snow, as well as on the grain-stacks; they always feed with their heads to the wind.

Black-breasted Longspur, *Calcarius ornatus.*—Breeds commonly on the prairie round Dalesbro', and feeds on grass-seeds.

Western Savanna Sparrow, *Ammodramus sandwichensis alaudinus.*—I shot a specimen in the Souris coal-field district on the 10th September.

Baird's Sparrow, *A. bairdii.*—Fairly represented in this region. One shot on August 3rd had been feeding on small red grasshoppers.

Clay-coloured Sparrow, *Spizella pallida.*—Common, breeding in the scrub about Moose Creek. One bird nested on the ground in a tuft of grass, and was flooded out; but built again and reared a brood in a similarly lowly situation.

Song-Sparrow, *Melospiza fasciata.*—Common in the district, nesting on the ground, and using a little horsehair in the lining.

Cliff-Swallow, *Petrochelidon lunifrons.*—Half-a-dozen pairs nested under the eaves of a stone house at Carlyle; we did not meet with the species elsewhere.

Barn-Swallow, *Chelidon erythrogaster.*—The only male and female preserved belonged to a small colony which were nesting among the rafters of a sod cabin.

White-rumped Shrike, *Lanius ludovicianus excubitorides.*—The only one observed was an adult, which we saw perching on a pile of wood at the Little Pipestone Creek.

Yellow-throated Vireo, *Vireo flavifrons.* — This warbler bred commonly in the scrub along Moose Creek.

SALMON AND TROUT CULTURE IN NATAL.

By Col. H. W. Feilden, C.M.Z.S.

During the past few years various endeavours have been made to stock the rivers of the garden colony of South Africa with Salmon and Trout, and these attempts have proved so far satisfactory that the best results may be hoped for, though the complete acclimatization of *Salmonidæ* in South African rivers cannot yet be described as a thoroughly accomplished fact.

The colony of Natal, embracing an area equal to about that of Scotland, rises by a series of steps from the Indian Ocean to its highest altitude in the peaks of the Drakensberg, and is watered throughout by a network of rivers and streams having their sources in that great mountain range which forms the western and northern boundary of the colony. To the eye of the casual traveller through Natal, most of the rivers appear the very ideal of trouting streams, and when one sees them issuing from the mountains through beautifully wooded kloofs (valleys), these bright, clear, cool streams remind one of good trout waters in English dales or Scottish Highlands. The similitude is heightened when a snow storm occurs, as I have myself seen in the northernmost, or Klip River, division of the colony, covering the summits of the Berg, plentifully bestrewing the outlying spurs and extending over the lower plains, causing great damage to flocks and herds. I there noted very striking contrasts, such as tree ferns and orchids powdered over with snow, *Nectariniidæ*, or Sun-birds,—the Old-World representative of the Humming-bird,—flitting round the blossoms, when I stood watching them ankle-deep in snow; Baboons were crying from their snow-clad ledges; the vleys, or small lakes at the foot of the mountains, had ice on them; and yet this same snow-clad area, only a few years ago,—when the white man appeared first on the scene,—was the haunt of the Eland, Elephant, Hippopotamus, and other large mammals associated in our minds with tropical heat and "Afric's sunny fountains."

I do not suppose that the temperature of the rivers in Natal, especially in their higher reaches, can be inimical to the breeding of Trout, and though, so far, there is no absolute certainty that the Trout already turned out have reproduced their species in Natal streams, yet there is abundant proof that those turned out have done exceedingly well, and have grown with great rapidity.

The initial steps in the interesting attempt to introduce the young of Salmon and Trout is due to an energetic and well-known colonist, Mr. John C. Parker, of Tetworth, Karkloof. This gentleman, in or about the year 1885, erected a hatchery on his estate, and imported ova. The shipment was unsuccessful, all the ova had perished. Two years later he imported more, but again with results only short of absolute failure:—out of 10,000 ova all were dead but twenty-seven, and these produced no fry strong enough to be turned out. Disheartening as was the outcome of these two experiments, Mr. Parker never lost faith in the enterprise, and with the co-operation of Mr. Cecil Yonge, then a member of the Legislature, the Council when appealed to made a grant of £500. These two gentlemen, with Col. Vaughan of Mooi River, formed—and still form—the official board for the carrying out of the enterprise for Salmon and Trout culture.

The first shipment of ova under the new direction took place in 1890; it consisted of common Brook-Trout, *Salmo fario*, and Loch Leven Trout, *S. levenensis;* of both kinds there were about 75,000 ova. The Brook-Trout proved almost a complete failure; the Loch Leven ova did better: out of 75,000 eggs some 1500 fry were hatched out, and in quantities of 500 were put into the Mooi, the Bushman's, and the Umgeni rivers. This success was considered sufficient by the Legislative Council to warrant the continuance of money aid, and for the second year the ova of three sorts of trout and one kind of salmon were procured.

The trout consisted of the same kinds as those first imported, with the addition of 10,000 American Brook-Trout, *S. fontinalis;* the number of salmon eggs, *S. salar*, was 20,000. The American trout gave bad results; most of the ova perished, and of two hundred hatched only thirty reached the stage for turning out. These were placed in a small stream in the Karkloof, and as none have since been seen it is uncertain whether any survive. The results attending the ova of *S. fario* and *S. levenensis* were similar to the first year—about 4500 trout-fry were turned out, the majority being *S. levenensis;* in lots of 500 they were put into the Umgeni, Umkomanzi, Mooi, Bushman's, Umsindusi, Umvoti, and other rivers.

The whole of the salmon-fry, about nine hundred, were turned into the 'Mcobene, a tributary of the Umkomanzi, at a spot a few miles above the junction. The Umkomanzi is without large falls, and the fish could easily travel down to the sea and back to its upper reaches, as far as obstacles in the river are concerned; but doubts have been expressed as to the suitability of the temperature of the Natal rivers for salmon, and in addition we are quite in the dark as to the possibility of a salmon surviving in the temperature of the Indian Ocean, whilst we are cognisant of the fact that the Indian Ocean abounds with sharks, porpoises, and other enemies.

During 1892, the third year of the enterprise, 180,000 ova were brought out in two shipments. The second consignment was unfortunate in being delayed through an accident to the machinery of the ship on which they were being conveyed. Better fortune attended the English Brook-Trout last year, whilst *S. fontinalis* were again unfortunate, the results being barren. Of the *S. fario* and *S. levenensis*, hatched in 1892, quantities of four to five hundred have lately been put into the Bushman's, Umkomanzi, Ilovo, Lotine, Mooi, Klip, Incandu, Ingogo, Sunday, and Lion's rivers. The balance of two or three thousand has been distributed among applicants to put into various small streams. Only some three hundred salmon reached the fry stage, and they have again been put into the Umkomanzi.

I have received lately an interesting letter from Mr. John Parker, dated 24th Nov. 1892, from which I take the following extract:—"As to salmon, I am sorry I can give you no information beyond the fact that I kept four salmon-fry in one of the hatching-boxes for six months. These got no food except what came down with the water. They were quite healthy, but did not appear to grow quite so fast as trout-fry under similar conditions. Unfortunately a thunder-storm flood came and washed the salmon-fry into the stream running past the hatcheries. Of course it is open to grave doubt whether salmon will succeed in Natal rivers; but as no one has yet fished the Umkomanzi for a grilse there is still the element of uncertainty about them, and I live in hopes of catching one in the autumn, if I can get away. The trout are doing well; the first I caught was thirteen months old and measured 6¾ inches; then, twelve months after that, two, 8 inches and 9½ inches long. This year (1892) I went to the Umgeni for a specimen, and in less than twenty minutes got one weighing 2 lbs. 2 oz., length 17 inches; it was taken with a 'March-brown,' and its age was two years and four months. It is now in the Museum at Pietermaritzburg, and is a *S. levenensis*. This coming winter (May to August, 1893) these trout will be only three years old, and they may spawn. Seeing that they grow so well, and are fat and healthy, I do not see why they should not breed in our Natal rivers."

I hope that the spirited enterprise of these Natal gentlemen, assisted by the Legislative Council, may be crowned with complete success. If the rivers of Natal can be stocked with trout, I believe that the money spent will bring forth fruit a hundredfold. The colony of Natal is the garden of South Africa, and is preeminently suited to be a home for that class of colonist who, in the old country, has been brought up with some ideas of sport, and I think that the certainty of a good trout stream at one's door would be the deciding attraction in inducing many a suitable man to elect Natal for his adopted home.

CONTRIBUTIONS TO A VERTEBRATE FAUNA OF THE ISLE OF MAN.

By P. M. C. Kermode.

The situation of the Isle of Man makes it an interesting district for the naturalist. If its vertebrate fauna is not extensive, its limitations are suggestive. Bishop Wilson, writing for Gibson's edition of Camden, published in 1772, says:—"There are several noxious animals, such as badgers, foxes, otters, filmerts, moles, hedge-hogs, snakes, toads, &c., which the inhabitants know no more of than their names." The absence of reptiles is not more striking than the absence of fresh-water fish; and in every department of Zoology one is impressed by the affinities of our fauna with that of the district,—the most distant of the surrounding lands:—Ireland, so much so, that if a form is not to be found in Ireland, it is useless looking for it as indigenous in the Isle of Man.

With respect to our fish, Prof. Edward Forbes contributed a brief account of the Natural History of the island to Quiggin's 'Illustrated Guide,' 1842, in which he mentions some rare forms not since recorded. Mr. R. Garner, in his 'Holiday Excursions of a Naturalist,' 1864, referred to several, adding the Blue Shark, and one or two others not rare. In 1885 Mr. J. C. Crellin presented a revised list to our local Natural History Society, to which I am not able to add more than five species. In arrangement and nomenclature I have followed Day, in his 'Fishes of Great Britain and Ireland,' 1880-84.

Of mammals, the only extinct species whose remains are now found is the Irish 'Elk,' *Cervus megaceros*, of which a fine specimen from Ballaugh, Isle of Man—the first complete skeleton ever put together—is to be seen in the Edinburgh Museum. The Red Deer is recorded as having been introduced, but has long since disappeared. In 1885 I contributed a list of mammals to our Natural History Society, and it was published afterwards in the 'Manx Note Book.' I am not yet able to add any species, except the Long-eared Bat, which I then believed to be present, and have since had, both dead and alive.

MAMMALS.

The list of indigenous mammals is very limited, the following being all that I know of:—

Vespertilio pipistrellus, Geoff. Common Bat, or Flittermouse. The Manks name, Craitnag, *i. e.*, skinny or wrinkled, is expressive of its appearance. From April to October it may constantly be seen at dusk, and in mild weather I have noticed an odd one so late as the beginning of December and so early as the beginning of April. It appears unable to rise from a flat surface, and a tame one, if placed on the floor, would make for the curtains or something up which it could climb; if on the table it would crawl to the edge, and holding on by the hooked claw of the thumb, would shake out the folds of its wings and flutter till it got the support of the air, when it would drop off and fly. This is one of the Cadlagyn or "Sleepers," of which there are supposed to be seven. The Seven Sleepers, "Ny shiaght cadlagyn," are:—Foillycan, butterfly; Shellan, bee; Jialg lheer, lizard; Craitnag, bat; Cooag, cuckoo; Clogh-ny-cleigh, stonechat, *i. e.*, wheatear ; and Gollan-geayee, swallow.

Plecotus auritus, Geoff. Long-eared Bat. Not so common as the last. Seen from middle of May to September.

Erinaceus europæus Linn. Hedgehog. Now common all over the island, but appears to have been introduced about the beginning of this century. The dictionaries give three words as the Manks equivalent for hedgehog: 'Muc-cleigh,' which is simply a literal rendering; 'Gray-noge,' said to imply something causing horror; and 'Arkán-sonneys, a fabulous creature ominous of plenty.' I have, however, never heard any of these applied by a native. The hedgehog hybernates here, as elsewhere; a young one that I caught on Oct. 7th, 1890, went to sleep, very suddenly, on Christmas Eve, and began to wake on April 19th following. I heard of another that went to sleep in October of the same year; it was kept in a coalhouse, mine in a little greenhouse, which would account for the difference.

Sorex araneus, Linn. Shrew. Cregeen's dictionary gives Thollog faiyr as the Manks, and the Rev. J. T. Clarke, in the Manx Society's dictionary, Thollag airhey, which is the form I have heard, and means literally "golden louse." In the north of the island it is called also "grass mouse." It is not uncommon. I have caught one in broad daylight, when in the act of crossing a country road, but it is more frequently seen dead than alive.

Mustela erminea, Linn. Stoat. Generally passes by the name of Weasel, as it does also in Ireland. The Manks name is Assag, pronounced Atthag, and 'Daney as attag,' "Bold as a weasel" is a well-known saying.

Phoca vitulina, Linn. Common Seal. Raun or Rhoan. Usually one or two are to be seen about the coast in the summer.

Mus sylvaticus, Linn. Long-tailed Field Mouse, Lugh-varghey, *i.e.*, Meadow-mouse, and Lugh-slieau, Mountain-mouse.

M. musculus, Linn. Lugh. Very plentiful. I have known it make a very neat little nest of shreds of paper which it had torn off, regardless of the contents. "Singing mice" I have heard, and been since told of by others.

M. rattus, Linn. Black Rat. Appears now to be extinct. I have never seen one here, and only occasionaly heard of it.

M. decumanus, Pall. Brown Rat, Roddan. Introduced probably towards the end of last century, and their numbers constantly recruited.

Lepus timidus, Linn. Common Hare, Mwaagh. The Manks equivalent to "Birds of a Feather" is Furree yn mwaagh rish e heshey, *i. e.*, "The Hare will be found with his mate." It is the object of superstition, and a favourite form to be assumed by a witch, and, the son of a witch who himself dabbled in the black art, has been known as Gaaue mwaagh,—"The Hare-smith." The natives would not think of eating a hare.

L. cuniculus, Linn. Rabbit, Conning (no doubt a corruption of the English word 'Coney'). It sometimes nests in the gorse without burrowing. Plentiful in 1658. I have not met with an earlier notice.

Phocæna communis, Less. Common Porpoise, Perkin. The dictionary gives Garmanagh, a word I have never heard, and adds, "we also use Muc-varrey." The Porpoise is common especially about Peel. Perkin vooar, *i. e.*, "big porpoise," may be applied indiscriminately to this or some larger cetacean. That other forms have approached our shores is certain. In 1885, I received a letter from Mr. Corrin, of Peel, in reply to some enquiries concerning one taken about 1860. He wrote:—"The large 'fish' captured off Peel twenty-five years ago was not a true

Sperm-Whale, but a species of Finner called the Rorqual Whale, and known to our fishermen as the Great Herring-Hog. It measured, from snout to tail, 30 ft. 1 in.; span of tail, 14 ft. 6 in.; dark coloured on the back, somewhat like the colour of a Rock-Conger, and white all over the belly; it was beautifully fluted on the belly from the gills to within 14 ft. of the extremity of the tail, and from there to the end of the tail quite smooth; its weight was over six tons, and on being dissected it was found to have a young one in its womb; its stomach was found to contain more than a cartload of *Thysanopoda*, or fringe-foot (a little crustacean very similar to, but rather smaller than, a shrimp), as well as a quantity of herrings. It was harpooned by William Lumsden, Esq., and after we had been in the tow of the fish for eleven hours, sometimes going at enormous speed through the water, during which we must have travelled backwards and forwards more than one hundred miles, it died, and we succeeded in bringing it into Peel. The jaw-bones, which were very large, have been preserved, and are, I believe, still in the possession of Mr. Lumsden, Glenaspet, Patrick."

The late Mr. Lumsden had been on more than one whaling expedition, and no doubt would recognise the species, but the reference to the curious "fluted appearance" would alone suffice to identify this as a small Rorqual, *Balænoptera boops*, Flem.

REPTILES.

There are only two indigenous reptiles, namely, the two species of lizard:—'Jolgan-leaghyr'—*Zootica vivipera*, Wagl., viviparous lizard, plentiful throughout the island; and *Lacerta agilis*, Linn., sand lizard, more common in the north. A local name is "Man-creeper," and these pretty and harmless creatures are too often sacrificed to a foolish superstition. The lizard is one of the Cadlaghyn, or Sleepers (see above under "Bat"). I have known it dug out of a hedge in a torpid state, in early spring.

Prof. Edward Forbes, in his sketch of our Natural History contributed to Quiggin's 'Illustrated Guide,' adds:— "*Triton palustris*, Warty Eft, and *Triton punctatus*, Common Eft, are by no means rare in their different habitats everywhere." I can only say that I have looked in vain for these, but have never even heard of them, and think the mention of them must be due to a slip of the pen. Prof. Forbes also says:—"Frogs are abundant, though they are popularly believed to have been imported, an idea for which there is no foundation." But Sacheverell, Governor of the Island in 1696, in his 'Short Survey of the Isle of Man,' remarks on the Curragh, in Kirk Christ Legayre, "not producing frogs or toads; though this may not seem strange in the neighbourhood of Ireland, both nations ascribing it to the blessing of their common apostle, St. Patrick." He offers some curious speculations on the cause. And Bishop Wilson, writing prior to 1755, expressly says in his 'History of the Isle of Man,' contributed to Gibson's edition of Camden (4th ed., 1772, p. 392):—"It is not now two years since somebody brought in frogs, which they say increase very fast."

The Frog, *Rana temporaria*, Linn., for which there is no Manks name, is now abundant throughout the island.

FISH.

The most noticeable thing with respect to Fish is the absence of fresh-water forms, of which only two Sticklebacks, Salmon, Trout, Eel, and Lampern are to be met with.

Labrax lupus, Cuv. Bass, Eeast, which is also the Manks for the class of fish generally. Plentiful about July.

Mullus barbatus, Linn., var. *surmuletus*. Surmullet. About July; not common.

Pagellus centrodontus, Cuv. and Val. Common Sea-bream, loc. Carp, as on the N.E. coast of Ireland, "Carf, Carp." July and August. This is included by Forbes under the name of *Pagrus vulgaris*.

Cottus scorpius, Linn. Father lasher, Kione tramman, and Bullkione. Common in rock pools left by the tide; generally small, about 4 to 6 in.

C. bubalis, Euph. Bubalis, Lucky proach.

Trigla lineata, Gmel. Streaked Gurnard, Crodane, a generic term: compare the Gaelic, Cnudan, cnodan, crudan.

T. cuculus, Linn. Elleck, Crodane jiarg, Captain jiarg.

T. hirundo, Linn. Tubfish. I have never seen anything more beautiful than the colours of the pectoral fins of this fish when first brought out of the sea. Off the coast in July and August; not so common as the last.

T. gurnardus, Linn. Gurnard, Grey Gurnard, Crodane glass, a local name for the young is 'noud.' Comes with the Red Gurnard, but in greater numbers. I have not noticed the white spots shown in Day's figures (Pl. xxv.).

Agonus cataphractus, Bl. Schn. Pogge. Mentioned by Professor Forbes under the name of *Aspidophorus cataphractus*, and, on his authority, included in Mr. Crellin's List. I have never seen it.

Lophius piscatorius, Linn. Angler, Gilley-pern. Not common. In the summer of 1885 I saw one about 3 ft. 6 in. long, washed ashore at Maughold Head, evidently choked by a large cod fish which was sticking in its throat.

Trachinus draco, Linn. Greater Weever. On 1st December, 1883, I got one taken by a trawler from off Bahama bank. It measured 14 in., and weighed 10½ oz. Forbes mentions it.

T. vipera, Cuv. and Val. Viper Weever, Colgagh. Not uncommon with sand eels.

Scomber scomber, Linn. Mackerel, Breac-Keayn.

S. colias, Gmel. Spanish mackerel. In Mr. Crellin's List. I do not remember to have noticed it.

Caranx trachurus, Lacép. Scad, Horse-mackerel, Breac frengagh. Not uncommon. On 23rd September last year I saw about half a dozen which had been taken off Laxey; they were about 17 in. long. This fish is not sold, but the fishermen eat it.

Zeus faber, Cuv. John Doree. Not common. On 30th May, 1883, I got one which had been trawled in Ramsey Bay: a female, with roe like grains of mustard-seed in a sac the size of a duck's egg, but flat. Its length was 17 in., and it weighed about 5 lbs.

Gobius ruthensparri, Euphr. Two-spotted Goby. This, which is the *G. minutus* of Nilsson, is probably the species mentioned under that name by Forbes. I have taken it in Ramsey Bay.

G. paganellus, Gmel. Paganellus. Rock pools.

G. niger, Linn. Rock Goby. A local name for it is "Miller's Thumb." I do not remember to have seen it longer than 4 to 5 in

Callionymus lyra, Linn. Dusky skulpin (female), Gemmous dragonet (male). Mentioned by Forbes, and included by Mr. Crellin on his authority.

Cyclopterus lumpus, Linn. Lump-fish, Kiark-varrey, Hen-fish. Not uncommon. On 13th February, 1882, I got a specimen full of roe, trawled off Maughold Head. A small one was speared off the Queen's Pier, Ramsey, by a diver, in July, 1885. On 7th September, 1889, I got a young one, 1 in. long. The fin-rays were no longer visible.

Carelophus ascanii, Collett. Yarrell's Blenny, Dhoom, Maughold. I have a specimen which I caught in a rock-pool.

Blennius ocellaris, Linn. Dr. Day, 'British Fishes,' i. p. 202, quotes:—"Has been recorded as having been dredged up on a scollop-bank in twenty fathoms of water, off Ballaugh, in the Isle of Man, in June, 1834" (Forbes, Mag. Nat. Hist.' 1836, ix., p. 203).

Centronotus gunnellus, Bl. Schn. Butterfish, Cadlag, Nine-eyes. Common; sometimes used for bait.

Mugil chelo, Cuv. Lesser Grey Mullet. Come in shore about April if fine; on hot days in summer hundreds may be seen basking about the edge of the water. My friend Mr. J. C. Crellin enjoys a novel sport at which he is an adept, namely, shooting these fish as he walks along the beach between Michael and Ballaugh; his spaniel retrieves them.

Gasterosteus aculeatus, Linn. Three-spined Stickleback, Jack Sharp. In brackish water at the mouth of small streams.

G. pungitius, Linn. Tinker, Breakfeather. Common in the curraghs and trenches of the north of the island.

G. spinachia, Linn. Fifteen-spined Stickleback, Snaid-varrey, *i. e.*, needle-fish.

Labrus maculatus, Bl. Ballan wrasse. Forbes gives this, and *L. lineatus*, which Day considers a variety of it, and *L. pusillus*, the young. Abundant, *L. maculatus* being the most common form.

L. mixtus, Fries och Ekstrom. Striped, or Cuckoo Wrasse (male); Three-spotted Wrasse (female). Not uncommon. I have heard "Coot" as a local name for the male.

Crenilabrus melops, Cuv. Baillon's wrasse. This is the *C. tinca* of Yarrell, under which name it is mentioned by Forbes.

Gadus morrhua, Linn. Cod, Boiddagh. Common, as is the variety, Red or Rock Cod, locally Boiddagh-jiarg. To Day's remarkable list of the contents of Cod's stomachs, I can add *Halithea aculeata*, Sea-mouse, of which some years ago I took two large specimens, one being quite fresh. Whelk is the favourite bait here. There is an inshore fishing from August to January, and a deep-sea fishing from February to April. The fishing is considered not so good as formerly, and this in part due to the destruction of spawning cod and of the fry.

G. æglefinus, Linn. Haddock, Attag.

G. luscus, Linn. Bib, Whiting-pout. We used to get a fish off Maughold in the summer when fishing Whiting which we called the Miller's Thumb or Poltag. I feel certain, but speak from memory, it corresponded exactly with Day's figure and description of this species.

G. merlangus, Linn. Whiting.

G. virens, Linn. Coal-fish, Green Pollack, Bloggan, Sargeant, Scieen, Gilpin, and, when very large, Saithe.

G. pollachius, Linn. Pollack, Kellag, calig. Common round the coast.

Merluccius vulgaris, Cuv. Hake.

Phycis blennoides, Bl. Schn. Greater fork-beard. From 1882 to 1885 I received several specimens trawled from a muddy bottom off Peel. They were taken from April to the end of July, and two or three of them (in July) were females having a small roe. Day ('British Fishes,' i., p. 304) says—"The species has not been recorded above 2 ft. long from the British Isles," but two of my specimens measured 24¼ in., one 24½ in., and one 22¾ in.; the greatest weight was 5¾ lbs.

Molva vulgaris, Flem. Ling.

Motella tricirrata, Nilss. Three-bearded Rockling. About Castletown. I have taken it among stones off Gob-ny-rona, near Ramsey.

Ammodytes lanceolatus, Lesauvage. Larger Sand-Launce, Gibbon-vooar. Has been taken on a hook in Ramsey Bay, and off the south of the island.

A. tobianus, Linn. Lesser Launce, Gibbon, Sand-eel. Plentiful. Used to be taken with reaping-hooks, as described by Thompson, of the last species on the coast of Down. A harrow has also been used, the people following it, picking up the fish.

Hippoglossus vulgaris, Flem. Holibut. On 11th May, 1885, one was taken on a long-line in Ramsey Bay, 6 ft. by 2 ft. and 6 to 7 in. thick, weighing 146 lbs., and in November, 1891, one was taken off Bahama Bank, weighing 140 lbs. Day, 'British Fishes,' ii., p. 8, quotes:—"An example, 7½ ft. long and 320 lbs. weight, was recorded from off the Isle of Man ('Mag. Nat. Hist.' 1829, i., p. 84), and is, perhaps, the example stated by Parnell to have (been) sent to the Edinburgh market (1828)."

Rhombus maximus, Cuv. Turbot. Not common. I have known it taken up to 22 lbs. off Maughold Head.

R. lævis, Rondel. Brill.

Zeugopterus punctatus, Collett. Müller's Top-knot. One was brought to us at the Biological Station, Port Erin, 24th Sept., 1892.*

Pleuronectes platessa, Linn. Plaice, Liehbage-spottagh.

P. limanda, Linn. Dab.

P. flesus, Linn. Flounder, Liehbage, Fluke.

Solea vulgaris, Quensel. Liehbage-chiari. The best are said to be taken off the Calf in 50 fathoms of water, and run to 8 and 10 lbs. the pair.

S. lascaris, Risso. Lemon sole.

Salmo salar, Linn. Salmon, Braddan. Decreased much of late from various causes, *e.g.*, the lead mines at Laxey and Foxdale, destruction of fry and of spent fish, &c. Salmon up to 32 lbs. have been taken off Maughold Head.

S. trutta, Linn. Varieties, *S. albus*, Walb. White Trout. *S. cambricus*, Don. Sewen.

S. fario, Linn. Trout, Breac. Very small, about 3 oz. being the average. The largest I have seen was at Tholt y Will, and measured 18 in., weighing about 1½ lb. This was April 6, 1885; it was a spent fish.

Belone vulgaris, Flem. Garfish. A local name is Snipe-fish. Not uncommon with mackerel in July.

Clupea harengus, Linn. Herring, Sceddan. For years past there has been a falling off in the Herring fishery, ascribed in part to the breaking up by trawlers of the coral spawning grounds.

Anguilla vulgaris, Turt. Eel, Astan. The Heron is known by the appropriate name of Cor-ny-astan, *i. e.*, eel-spearer.

Conger vulgaris, Cuv. Conger, Astan-varrey.

Syngnathus acus, Linn. Greater Pipe-fish, locally known as "scaled-eel." Not uncommon. I have had the males in May with the pouch full of eggs, about 1-20 in. diameter.

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* It had been taken by a net close to the shore. See 'Sixth Annual Report of the Liverpool Marine Biology Committee,' p. 44.

Nerophis æquoreus, Kaup. Ocean Pipe-fish and Snake Pipe-fish, Couch. Forbes mentions *Syngnathus æquoreus*, which no doubt will be this. He adds *S. ophidion*, which may be,—

N. ophidion, Kröyer. Straight-nosed Pipe-fish, Couch. I have not yet come across it.

Orthagoriscus mola, Bl. Schn. Sun-fish. Forbes mentions this also, and I think it is on his authority Mr. Crellin includes it. I have not heard of it otherwise.

Accipenser sturio, Linn. Sturgeon, Eeast-varrey. Rarely taken. In August, 1885, one was trawled off the Bahama bank; it measured over 6 ft., and weighed 210 lbs.

Carcharias glaucus, Cuv. Blue shark. Mr. Garner saw one which was taken in Douglas Bay. ('Holiday Excursions of a Naturalist,' p. 83.)

Mustelus vulgaris, Müll. Smooth hound, Bock glass.

Scyllium canicula, Cuv. Rough hound, Gobbag hooill, Blind gobbag. Common.

S. catulus, Cuv. Nurse-hound, or large spotted dog-fish, Gobbag.

Acanthias vulgaris, Risso. Picked dog-fish, locally, Herring dog-fish.

Rhina squatina, Raf. Ind. Monk fish. Rare. Forbes mentions it under the name of *Squatina angelus*, or angel fish. I have known of one taken in the north of the island many years ago.

Raia batis, Linn. Skate, Scarrag. Plentiful.

R. oxyrhynchus, Linn. Long-nosed Skate, Peegagh.

R. clavata, Linn. Thornback Ray.

R. maculata, Mont. Spotted Ray.

Petromyzon fluviatilis, Linn. Lampern and silver lamprey. Couch. In trenches and ditches; not uncommon; of small size.

NOTES AND QUERIES.

MAMMALIA.

"Black Rats."—In the last month's 'Zoologist' (p. 20), Mr. Charles Garnett, of Clifton, states that eleven years ago he saw "a colony" of Black Rats, *Mus rattus*, "in a ditch on Donside, in Aberdeenshire." Might I ask your correspondent if he procured a specimen by which he can prove the correctness of his identification? If he did not, I fear we must conclude that the animals he saw were a colony of the black variety of the common Water-Vole—the *Arvicola ater* of Macgillivray—which, as is well known, is particularly abundant in the ditches and streams of Aberdeenshire and Banffshire. I can call to mind, too, many instances in recent years where this creature has been recorded as the Old English Black Rat, *Mus rattus*—a mistake which one would fain hope will soon become as great a rarity as *Rattus* itself.—William Evans (Edinburgh).

As there is in 'The Zoologist' for last month (p. 19) the record of a Black Rat, *Mus rattus*, I may say that on the s. s. 'Wordsworth,' late of Messrs. Lamport and Holt's line, we killed several of this species. Some were caught in traps and let out for the fox-terrier to kill, one of whom, preferring a watery grave, leapt overboard and was drowned; another climbed down a rope into a boat that was going ashore, but was knocked into the sea by one of the sailors. —M. Burr (Bellagio, East Grinstead).

BIRDS.

The proportion of Adult and Immature Birds amongst Accidental Visitors to the British Islands.—In reference to this question, may I be allowed to quote from a work on the Geographical Distribution of British Birds (p. 15), which is now in the binder's hands:—"The fifth group is a very large one and contains all those waifs and strays which are supposed to have wandered out of their usual track to our shores, some of them being adult birds which have been driven involuntarily out of their ordinary course by storms and contrary winds, but most of them being very young birds who have accidentally joined the wrong batch of migrants, and have thus been led astray on their first trip, or have lost their way in attempting to find it alone on their second trip. These are called 'Accidental Visitors.'" I venture to think that Mr. Cordeaux, in his communication on this subject in the last number of 'The Zoologist' (p. 26), has arrived at a different conclusion simply because the statistics which he quotes are inaccurate. In the first place, very many of the species which he names are regular autumn visitors on migration to Heligoland, and as they do not really come under the category of "Accidental Visitors," the proportion of adult to immature birds which they show has really nothing to do with the question under consideration. The Shore Lark, *Otocorys alpestris*, and Richard's Pipit, *Anthus richardi*, occur so regularly and in such numbers that Western Europe must be regarded as one of their regular winter quarters, and consequently their evidence cannot affect the question. The Little Bunting, *Emberiza pusilla*, and the Rustic Bunting, *E. rustica*, breed commonly near Archangel, and their natural fly-line to the south is down the Baltic; but probably—like the Shore Lark and Richard's Pipit—they have comparatively recently extended their breeding-range in a westerly direction, and are gradually establishing a western line of migration which is more and more frequented every autumn. They can scarcely be regarded as accidental visitors to Heligoland, and their evidence on the question under adjudication must be ruled to be out of court. In the second place, what does Mr. Cordeaux mean by the term "immature birds"? Of course he includes young in first plumage. Young in first plumage of the various species of *Limicolæ* appear by thousands on Heligoland, but there is no instance of any bird belonging to the *Turdinæ* (as defined by Mr. Oates and myself) appearing on Heligoland in first plumage; for the simple reason that every migratory species belonging to this subfamily always moults before it migrates. We may assume that Mr. Cordeaux includes young in first winter plumage, as he admits *Turdus ruficollis* and *T. fuscatus* in that plumage, but does he include young in first spring plumage? List A consists of 122 birds which have overshot their mark in spring on their migration from their winter quarters to their breeding grounds, and eleven birds which have made the great blunder of migrating north instead of south in autumn. Mr. Gätke admits that the latter are young birds, but he asserts that the former are old birds. I think his assertion that the 122 birds obtained in Heligoland in spring are old birds is incorrect. I have no doubt that most of them were birds of the year—that is to say, birds not a year old, birds which had not yet bred, birds which were making their first journey to their breeding grounds. It would require a very accurate knowledge of the minute differences between the plumage of birds in their first spring dress and of adults to decide the point; a knowledge that Mr. Gätke can have had no means of acquiring, and of which there is, of course, no evidence to be found in his book. "*Turdus varius*, 9 old, no young."—I am inclined to think that Mr. Gätke has never seen an old example of White's Thrush:—when I wrote the fifth volume of the 'Catalogue of Birds in the British Museum' I do not think that I had done so; since then I have seen some hundreds of Japanese examples of this very handsome species, and I find that in most of them the upper parts, the breast, and the flanks are suffused with golden buff; and the pale tips of the lesser wing-coverts and the peculiar Geocichline markings on the inner webs of the primaries are buff. Such I take to be birds of the year. Other examples are more olive on the upper parts; there is very little buff on the breast and flanks; and the pale tips of the lesser wing-coverts and the peculiar Geocichline pattern on the inner webs of the primaries are pure white. These I take to be adult birds, which seldom, if ever, wander to Europe. I have no doubt whatever that if birds which are not accidental visitors be excluded, and birds of the year be regarded as immature, the evidence of Heligoland will be found to agree with that of the British Islands in favour of the theory that the greater number of Accidental Visitors are immature.—HENRY SEEBOHM.

Correction of Error.—In 'The Zoologist' (1893, p. 26), I have given "two adult to three young" as the proportion amongst the autumn immigrants. This should, however, be two-thirds young, and read "one adult to two young." The statement, which is based on Mr. Gätke's observations at Heligoland, must be taken as having reference to the common host of and throughout the period, and in no way connected with the composition of separate flocks or partial observations restricted to any special area on the east coast.—JOHN CORDEAUX (Eaton Hall, Retford).

Occurrence of the Carrion Crow in the Island of Coll. — On the 6th of last December I saw and heard a single Carrion Crow, *Corvus corone*, in Coll. I was unable to shoot it, but was not more than a hundred yards from the bird, which was very noisy. There is no authenticated record of this species from either Coll or Tiree, though Messrs. Harvie-Brown and Buckley mention, in 'Fauna of the Inner Hebrides' (p. 89), that it has been reported from Tiree: a report, I fairly own, I did not credit till I personally saw one in Coll. It may be added that this autumn and winter a great many Rooks visited Coll from Mull; they could be seen coming over in the morning and returning in the evening, some few, however, remaining to roost.—L. H. IRBY (Army and Navy Club).

Garganey in Holderness.—I do not think that Mr. Cordeaux has got the right date for the occurrence of the above (see Zool. 1892, p. 424), which has been repeated in the Yorkshire 'Naturalist' under the same date—*i.e.* Sept. 19th. I saw a young Garganey, in the flesh, obtained by one of Dr. Hewetson's party on Sept. 2nd; and I took great pains in stalking a small duck next day, believing it to be another Garganey, but which when shot proved to be only a Teal. So that either Mr. Cordeaux's record is not properly the first for the Humber district or he must have been misinformed as to the date.—H. H. SLATER.

Baillon's Crake in Nottinghamshire.—On February 13th, 1891, the birdstuffer at Retford pointed out to me, on one of his top shelves, a small Spotted Crake, which had been obtained on the river at Bolam, near Retford, some little time previously. Subsequently my brother bought the bird, which has turned out to be a specimen of Baillon's Crake, *Porzana* *bailloni* (Vieillot), in somewhat immature plumage. This appears to be the first occurrence recorded for Nottinghamshire.—LEONARD BUTTRESS (Grove, near Retford, Notts).

Lesser Whitethroat in County Durham.—Early one morning, at the beginning of last June, I heard a bird, in the garden outside, whose song was quite new to me. I went out before breakfast to see it, but, though I caught a glimpse of the warbler, I could not identify it, and, although it kept singing constantly, its song only puzzled me as to the species. It proved itself a most difficult bird to observe, as its habit was to sit motionless amongst a clump of green leaves, singing the while, and generally highish up in a sycamore or beech tree. Then, as one approached and peered up, it would at once betake itself to a similar situation, perhaps a hundred yards away. The difficulty of getting a glimpse of it was thus prolonged for nearly a week, although it remained in the garden all the time. We had frequent discussions at home as to what it was. Knowing nothing of its song, and not being able to see the bird, hopes of some rare straggler would enter one's head; eventually, however, it proved to be nothing more than a Lesser Whitethroat. Some of my southern readers may laugh at my want of knowledge of the song and habits of a bird which is so common with them; but the bird is very rare in these parts of our northern counties where I happen to have been: so uncommon is it that, with the exception of a solitary nest found by one of us more than twenty years ago, in a district then uncontaminated by pit-smoke, we have never come across the bird at all. Its song was as new to me as if it had been another Icterine warbler, which turned up and was identified in a garden near Newcastle, some few years ago. Why it is so rare with us I cannot say, but it is my opinion that the Lesser Whitethroat is one of the rarest warblers in the north-east corner of England.—ALFRED C. CHAPMAN (Moor House, Leamside).

[Owing to its somewhat skulking habits, *Sylvia curruca* is liable to be overlooked; but even where sought for, by practised ornithologists, its distribution is apparently capricious, and the reasons are, in many cases, as yet unexplained. Like several other Warblers, this species becomes scarcer as we proceed westward, and Messrs. D'Urban and Mathew evidently do not believe in the positive assertions published in this Journal for 1891 (pp. 273, 309) respecting its nesting in Devonshire. It may, however, be extending its range westward, for, whereas it was first recorded as a breeder in Breconshire in 1886, we find Mr. Swainson writing of it in 1891 (Zool. p. 355) as "pretty evenly distributed in suitable places in the neighbourhood of Brecon"; he also says that it is rather common in South Shropshire. Of the southern, eastern, and midland counties we may say, broadly, that the species is tolerably abundant, though trustworthy local details are much to be desired; while "generally distributed, though in varying numbers," was the summary—doubtless correct—for the huge county of Yorkshire, in 1881. To Cheshire and Lancashire the Lesser Whitethroat appears to be a regular visitor in small numbers, and it breeds sparingly in "Lakeland"; but on the east side of the "divide" it becomes very rare, as we see, in Durham; is not authenticated in Northumberland; and, across the Tweed, was unrecorded up to 1888, in Berwickshire (Muirhead). Turning a little south-westward, we have the valuable evidence of Mr. Service as to its sparse distribution in Kirkcudbrightshire, Dumfriesshire, and down by the Borders—showing the line of migration through the Lake district, and there are statements as to its nesting locally up to Stirlingshire, beyond which it is not known to breed. The bird shot by Mr. G. Sim at Aberdeen, in November, 1880, as well as the examples observed by Saxby in the month of September on the island of Unst, in the Shetlands, were probably migrants from Scandinavia, where the species is known to breed up to 65° N. lat.; a migrant was the only Irish specimen on record, obtained off the coast of Kerry on October 1st, 1890; and such, probably, the autumnal visitors recorded by Rodd from the Scilly Islands. The European distribution of the Lesser Whitethroat is essentially easterly; the species being uncommon in Normandy and Western France; very rare, even on passage, in Portugal; and only becoming recognisable in Spain, either on transit or in winter, to the eastward of the Straits of Gibraltar; in fact, it cannot fairly be called a regular migrant before we come to the province of Valencia, close upon the meridian of Greenwich.—Howard Saunders—Ed. *pro tem.*]

Cormorant with Parasitic Worms.—Having occasion to examine the stomach of a Cormorant, *Phalacrocorax carbo*, I was surprised to find the interior of the digestive cavity occupied by numerous parasitic worms. Some few of these were detached, but the majority adhered in bunches to the walls of the stomach. These worms measure about an inch in length, are round in form, and often carry a single black stripe. Is it probable that these worms had been transferred to the digestive cavity of the Cormorant from the interior of a flounder or other fish "host"?—D. L. Thorpe (Carlisle). [Communicated by the Rev. H. A. Macpherson.]

Addition to the Birds of Donegal. — Mr. H. C. Hart, in his note on this subject (p. 22), omits one bird that, as far as I am aware, has not before been recorded in his lists—namely, the Fulmar, *Fulmarus glacialis*. In the 'Irish Naturalist' for July, 1892, I notified the occurrence of this bird in Co. Donegal. The specimen, which was a well-defined example of the grey-breasted form, I picked up on the sands between Ballyshannon and Bundoran.—H. Lyster Jameson (Loughgilly, Co. Armagh).

FISHES.

Weight of Trout.—The following note, on account of the date of capture, may be of interest. At Walsingham Abbey, Norfolk, the seat of H. Lee Warner, Esq., there hangs the picture of a Bull Trout, evidently painted to scale, with the following inscription:—"Taken at Fordwick, in Kent, in the year 1672, weigh'd 27 Pounds. This is the representation of a Trout, which was given in 1672, to Henry Lee, Esqr., of Danejon. near Canterbury, for which city he was then Member of Parliament, and was so in seven successive Parliaments, and in one for Hindon."—H. W. Feilden.

INSECTS.

Sirex gigas and Colias edusa in Holderness.—A specimen of *Sirex gigas* was given to me one day at the end of last July. Probably to be accounted for by the Hull timber-yards. *Colias edusa* was very plentiful in South Holderness. I saw as many as twenty-five in a day. Two examples of var. *helice* were seen, and one captured.—H. H. Slater.

SCIENTIFIC SOCIETIES.

Linnean Society of London.

General Meeting, Jan. 19, 1893.—Prof. Charles Stewart, President, in the chair.

After the confirmation of the minutes, the President referred in suitable terms to the losses sustained by biological science in the deaths of Sir Richard Owen and Prof. J. O. Westwood, who had been Fellows of the Society for fifty-six and sixty-four years respectively.

Mr. George Brook showed photographs of Corals which he had lately taken, and had reproduced by permanent-process at a cost below lithography, with the added advantage of permitting amplification by a hand lens.

The President read a paper on the auditory organ of the Angel Fish, *Rhina squatina.*

Mr. W. Carruthers then laid before the Society the results of a collection made by Mr. Alexander Whyte in the Malanji country, in the Shire Highlands, in Octobér, 1891, and the plants were determined by the officers of the Botanical Department, British Museum, about sixty—or roughly speaking one-fifth—proving new to science. Whilst Sir J. D. Hooker defined the flora of Kilimanjaro as Abyssinian in character, the Malanji flora displays a much closer relationship to the Cape.

The last paper was by Mr. G. F. Scott Elliot, and was his report as botanist to the Anglo-French Sierra Leone Boundary Commission, in which he gave an account of the economic aspects of the districts traversed.

ZOOLOGICAL SOCIETY OF LONDON.

Jan. 17, 1893.—Sir W. H. FLOWER, K.C.B., LL.D., F.R.S., President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of December, 1892.

Mr. F. C. Selous exhibited and made remarks on the head of a hybrid Antelope between the Sassaby, *Bubalis lunata*, and Hartebeest, *B. caama;* also a head of a female Koodoo, *Strepsiceros kudu*, with horns and heads of some other South-African Antelopes.

Mr. O. Thomas exhibited some examples (from the Baram River, Sarawak, collected by Mr. Hose) of the Monkey that he had lately described as *Semnopithecus cruciger*, and stated that, in spite of the confirmation afforded by these specimens, Mr. Hose thought that this species might possibly be only an erythrism of *S. chrysomelas*.

A communication was read from Mr. E. Y. Watson, entitled "A proposed classification of the *Hesperiidæ*, with a revision of the Genera." This contained a preliminary classification of the *Hesperiidæ*, including the numerous modern genera, which were arranged under three subfamilies according to the sexual differences, the resting posture, the antennæ, the spurs on the hind tibiæ, and the position of vein 5 (relative to veins 4 and 6) of the fore wing. The subfamilies were named *Pyrrhopyginæ*, *Hesperiinæ*, and *Pamphilinæ*, and the two last were subdivided into sections without names. In all 234 generic names were dealt with, of which 49 were treated as synonyms, while 45 new genera were described. Complete diagnoses were given of all the admitted genera.

A communication was read by Mr. E. E. Austen, entitled "Descriptions of New Species of Dipterous Insects of the family *Syrphidæ*, in the Collection of the British Museum, with Notes on Species described by the late Francis Walker." This communication contained descriptions of twenty-three new species belonging to the division *Bacchini*, and of one belonging to the *Brachiopini* (genus *Rhingia*). An attempt was made to divide the genus *Baccha*, as at present existing, into three groups, based chiefly upon the shape and markings of the abdomen. The true position of the remarkable genus *Lycastrirhyncha*, founded by Bigot on a species from Brazil, and afterwards cancelled by its author in favour of *Rhingia*, was established. It was shown that this genus had nothing to do with *Rhingia*, but was one of the *Eristalini*, closely allied to *Eristalis*. It was also shown that the genus *Lycastris*, founded by Walker for a species from India, was not identical with *Rhingia* (as had been likewise suggested by Bigot), but belonged to the *Xylotini*, and was allied to *Criorrhina*.

A communication was read from Mr. Gilbert C. Bourne, containing descriptions of two new species of Copepodous Crustaceans from Zanzibar, proposed to be called *Canthocamptus finni* and *Cyclops africanus*.

Mr. Sclater exhibited and made remarks on the typical specimens of a rare Argentine bird, *Xenopsaris albinucha*, described by the late Dr. Burmeister in 1868.—P. L. Sclater, *Secretary*.

Entomological Society of London.

January 18, 1893. — *The Sixtieth Annual Meeting.* — Frederick DuCane Godman, Esq., F.R.S., President, in the chair.

An Abstract of the Treasurer's accounts having been read by one of the Auditors, the Secretary, Mr. H. Goss, read the Report of the Council.

After the ballot it was announced that the following gentlemen had been elected as Officers and Council for 1893:—President, Mr. Henry J. Elwes, F.L.S.; Treasurer, Mr. Robert McLachlan, F.R.S.; Secretaries, Mr. Herbert Goss, F.L.S., and the Rev. Canon Fowler, M.A., F.L.S.; Librarian, Mr. George C. Champion, F.Z.S.; and as other Members of the Council, Mr. C. G. Barrett, Mr. Charles J. Gahan, M.A., Mr. F. DuCane Godman, F.R.S., Mr. Frederic Merrifield, Mr. Osbert Salvin, M.A., F.R.S., Dr. David Sharp, M.A., F.R.S., Colonel Charles Swinhoe, M.A., F.L.S., and Mr. George H. Verrall.

The President then delivered an Address, which, though containing reference to the Society's internal affairs and an allusion to the successful resistance made by naturalists and others to the War Office scheme for establishing a rifle range in the New Forest, consisted for the most part of full obituary notices of Fellows of the Society who had died during the year, special mention being made of Mr. H. W. Bates, F.R.S., Prof. Hermann C. C. Burmeister, M.D., Dr. Carl A. Dohrn, Mr. H. Berkeley-James, Mr. J. T. Harris, Sir Richard Owen, K.C.B., F.R.S., Mr. Henry T. Stainton, F.R.S., Mr. Howard Vaughan, and Prof. J. O. Westwood, M.A., the Hon. Life-President. A vote of thanks to the President having been proposed by Lord Walsingham, F.R.S., and seconded by Mr. J. H. Leech, Mr. Godman replied.

Dr. D. Sharp, F.R.S., then proposed a vote of thanks to the Secretaries Treasurer, and Librarian, which was seconded by Mr. W. H. B. Fletcher. Mr. McLachlan, Mr. Goss and Canon Fowler then severally replied, and the proceedings terminated.—H. Goss & W. W. Fowler, *Hon. Secretaries*.

NOTES ON SCIENTIFIC MAGAZINES.

The 'Irish Naturalist' for December contains a paper by Professor J. R. Leebody on the Birds of Lough Swilly, which forms a useful appendix to the series of articles on the "Birds of Donegal" recently contributed to 'The Zoologist' by Mr. H. Chichester Hart and others. The summer frequenters of Lough Swilly are not very numerous, for, except at Dundaff, the sea-fowl do not resort to the cliffs, owing, as the author believes, to the absence of any strong tidal current. His experience is that the parent birds mainly rely on herring-fry as a food supply for their nestlings, and as the "brit" is most plentiful in a strong tidal run, the birds chiefly resort to those cliffs which are in proximity to such conditions. In winter, however, Lough Swilly is a great resort of water-fowl, as the list shows, and flight-shooters often obtain excellent sport. Dr. R. F. Scharff concludes his list of the Irish Land and Freshwater Mollusca, and has identified a small *Planorbis*, obtained by Mr. J. N. Milne at Lough Swilly, as *P. riparius*, Westerlund, a species new to the British Islands, but recorded from Northern Germany, Sweden, and Siberia. In the January number Dr. R. F. Scharff discusses the question of whether the Common Frog is indigenous in Ireland; the Rev. Hilderic Friend commences a series of papers on Earthworms; and the Macro-Lepidoptera of the Londonderry district are enumerated by Mr. D. C. Campbell.

The January issue of that excellent quarterly magazine, 'The Annals of Scottish Natural History,' has some further particulars of Risso's Grampus, near Annan, by Mr. Robert Service, a notice of which appeared in 'The Zoologist' for 1892 (pp. 404, 405). Mr. J. A. Harvie-Brown gives an interesting account of two visits to the southern portion of the Shetland Islands,—a district little known to ornithologists, who usually betake themselves to the northern and western islands in search of the bird with which the Shetlands are especially identified, namely, the Great Skua. The experiences of Saxby, the great authority on the group, were, in fact, almost confined to Unst, and comparatively few naturalists have explored the comparatively tame country of the south, in spite of the glamour which is associated with Sumburgh and Fitful Head. This district is, however, crossed by the fringe of an important line of migration; the Wryneck passes there, and the Bernacle Goose—till now only recorded as a rare straggler—resorts in numbers every autumn to the Quendale sandhills. Of the Spotted Crake Saxby wrote, "not in Shetland," and only two are recorded (on the October passage) in Saunders's 'Manual'; but now we learn that the species is not uncommon in the south, though it is only to be found with the assistance of a dog, and its existence in Mousa was not suspected until 1891, when three were obtained by this means. Mr. Harvie-Brown thinks that some unusually large and heavy Snipe, which arrived towards the end of September, were probably *Gallinago major*, a species not yet identified, we believe, in the Shetlands. Dr. Traquair describes and figures an unusually coloured example of the Thornback (*Raia clavata*, Linn.), and Mr. W. Anderson Smith contributes notes on a very rare and interesting species of Star-fish (*Astronyx loveni*, Muller), from 90 fathoms in the Sound of Sleat, and only once obtained previously in Scottish waters. Readers of the articles in 'The Zoologist' on the distribution of the Polecat will be interested to learn that several individuals have been taken at Lochinver; there are notes on the misdeeds of Voles, as might be expected at a time when they are deemed worthy of a nothing less than special Government Commission to Greece; evidence that the Ring Ouzel sometimes remains during the winter in the mild climate of Galloway is adduced by Mr. Robert Service; a Jackaw's nest in the main-topmast head of the training-ship 'Empress' is described by Mr. Jas. Lumsden; and there are many other interesting notes.

ERRATA.—Page 37, line 2 of the review, for "Hartwig" read "Hertwig"; line 5, for "Hussey" read "Hersey"; line 9, for "entomologists" read "embryologists." Page 38, line 6, for "Iris" read "His"; line 20, for "langers" read "layer"; line 28, for "Mitsukwi" read "Mitsukuri."

BRITISH 9 DE 93 MUSEUM